



# Top 10 Student Teams Vie for \$15,000 CSIDC Prize

A computer design event that has spanned two semesters and involves undergraduates from around the world is at the live demo stage. The IEEE Computer Society International Design Competition allows teams of undergraduate engineering students the opportunity to design, from inception to prototype, a special-purpose computer-based device to solve a real-world problem. The competition this year focused on the theme of “Making the World a Safer Place.”

An international panel of judges selected ten teams from more than 250 original contenders to face off for two

**The Fifth Annual Computer Society International Design Competition features the work of teams from all areas of the world, including Brazil, Nepal, South Africa, and the US.**

intensive days of competition. In May, judges reviewed 80 project reports con-

taining project specifications, including engineering considerations and implementation. Many teams failed to pass an interim report stage in February, were eliminated through intra-school competitions, or dropped out before submitting the 20-page report. (CSIDC rules allow only one team per school to advance to the final stages of the competition.)

Prototype student-developed devices on display at the World Finals include a child abduction prevention system, several earthquake warning systems, and a pollution reduction device. The “Top 10 CSIDC Teams” sidebar lists the CSIDC 2004 World Finals teams and project names.

Said Alan Clements, chair of the CSIDC Committee for four years and a professor at the University of Teesside in England, “Some of the best of the teams in 2004 have applied computer technology to ... areas such as earthquake detection and water pollution. Their ability to investigate problems of such importance to the community is truly impressive. Indeed, we have decided to follow their lead and make CSIDC 2005 a multidisciplinary competition that requires all teams to take such an approach.”

CSIDC prizes range from \$15,000 for first place to \$6,000 for third place, plus honorable mention awards of \$2,000. The competition also includes two special prizes: the Microsoft Award for Software Engineering and the Microsoft Multimedia Award.

Primary financial support for CSIDC 2004 is provided by Microsoft, which has provided \$1,000,000 in funding for CSIDC until 2006. ABB and the IEEE Foundation have provided additional financial support. ■

## Top 10 CSIDC Teams

The IEEE Computer Society International Design Competition encourages undergraduate teams to work together much as they would at industry engineering posts. Addressing the broad theme of “Making the World a Safer Place,” these 10 teams from around the world created prototype systems that impressed an international panel of judges enough to earn them a spot in the CSIDC World Finals live event.

- Humboldt University, Berlin (Germany), “PLAS.MA: Person Loss Avoidance System for Mobile Applications”
- Institute of Engineering, Pulchowk Campus, Tribhuvan University (Nepal), “TremorFlash: Earthquake Warning and Follow-up System”
- Instituto Militar de Engenharia (Brazil), “Dangerous Load Monitoring Alarm System”
- Iowa State University (USA), “Spatial Cue”
- Lahore University of Management Sciences (Pakistan), “SensUS Structure Security System”
- National Taiwan University (Taiwan), “ADaptable VIsionary System for Earthquake Resolution”
- Politehnica University of Bucharest (Romania), “eXpress! Help”
- Poznan University of Technology (Poland), “Lifetch”
- University of Pretoria (South Africa), “Intelligent Elderly Care—iEC”
- University of Virginia (USA), “The Polluter Must Pay”

# Computer Society Awards Program Honors Achievements in Many Computing Fields

**W**ith award recognitions large and small, the IEEE Computer Society demonstrates appreciation for the contributions that our members and others have made to the computing field. This month, the work of researchers in three discrete areas takes center stage. Jack Dongarra was a primary contributor to Linpack and other open source software packages. Victor Basili is active in the software quality assurance community. And Carlo Séquin has made a name for himself in the computer graphics field.

## Jack J. Dongarra Receives Fernbach Award



**Jack J. Dongarra introduced the Linpack benchmark for high-performance computers.**

In recognition of his work at the nexus of mathematics and computing, Jack J. Dongarra has received the Computer Society's Sidney Fernbach Memorial Award. Dongarra's research focuses on numerical algorithms in linear algebra and the use of advanced computer architectures, among other fields of study. A former senior scientist at Argonne National Laboratory, Dongarra now holds appointments as University Distinguished Professor of Computer Science at the University of Tennessee, Distinguished Research Staff member at Oak Ridge National Laboratory, and Adjunct Professor at Rice University. He is the founder and director of the Innovative Computing Laboratory at the University of Tennessee's Knoxville campus. The ICL uses high-performance computing

tools to tackle science's most challenging problems.

A key contributor to the design and implementation of the Linpack collection of Fortran subroutines that solve linear least-squares problems, Dongarra has also participated in the development of similar open-source packages including Lapack, Netlib, and Atlas. Current applications of high-performance computing techniques that Dongarra is investigating include climate modeling and materials science.

Dongarra is a Fellow of the IEEE, the AAAS, and the ACM and is a member of the National Academy of Engineering. His award citation reads, "For outstanding and sustained contributions to the area of mathematical software, most particularly in the areas of communication and numerical libraries and performance benchmarks

for high-performance computing."

Established in 1992, the Fernbach Award recognizes contributions in the application of high-performance computers. Awardees receive a certificate and a \$2,000 honorarium.

## Maryland's Victor R. Basili Honored with Mills Award



**Victor R. Basili is a cofounder of the International Software Engineering Research Network.**

Victor Basili, a professor at the University of Maryland's Institute for Advanced Computer Studies, has re-

## Fall 2004 CSDP Testing Window Opens 1 September

Attention software professionals: Do you need an extra edge to prove your skills to current or potential employers? Apply to sit for the IEEE Computer Society Certified Software Development Professional (CSDP) credential. Each year, the Computer Society offers two opportunities to take the CSDP exam: April through June, and September through October.

Software engineers who hold a baccalaureate degree, and who have a minimum of 9,000 hours of experience in the field, are eligible to apply. In addition, candidates for certification must have had at least two years of software engineering experience within the four-year period prior to application.

Thomson Prometric administers the CSDP exam at test centers throughout the world. For IEEE or Computer Society members, 2004 CSDP exam fees total \$400, including a \$100 application fee and a \$300 test administration fee. A CSDP Study Group online Yahoo forum, linked from the CSDP Web site, can help you prepare. Resource materials and an online test preparation class are also available. Register for the prep class by **1 August** to receive a \$100 discount on course fees.

Applications for the 1 September through 30 October testing window must be postmarked by **15 August**. The application form is available online at [www.computer.org/certification/bulletin.htm](http://www.computer.org/certification/bulletin.htm). For general information on the IEEE Computer Society CSDP program, visit [www.computer.org/certification/](http://www.computer.org/certification/).

ceived the IEEE Computer Society Harlan D. Mills Award for his contributions to software engineering.

Basili serves as director of the NASA Goddard Space Flight Center's Software Engineering Laboratory (SEL) and is the executive director of the Fraunhofer Center for Experimental Software Engineering-Maryland.

A founding member of the International Software Engineering Research Network (ISERN), Basili's research interests include experimental software engineering and software quality assurance. He has written several books—including one that he co-authored with Harlan Mills—on structured programming, the SIMPL-T programming language, and related topics.

In 1994, Basili's SEL team won the IEEE Computer Society Award for Software Process Achievement. An IEEE Computer Society Golden Core member and active volunteer, Basili is also a Fellow of the IEEE and the ACM. His citation for the Mills award reads, "For significant contributions to programming languages, program reading

and writing, and empirical methods."

Established in 1999, the Mills award recognizes researchers and practitioners who have demonstrated long-standing, sustained, and meaningful contributions to the theory and practice of the information sciences. Recipients are presented with a memento and a \$3,000 honorarium.

### Carlo H. Séquin of Berkeley Wins Technical Achievement Award



*Carlo H. Séquin applies CAD/CAM technology to the creation of abstract sculpture.*

The IEEE Computer Society has honored computer graphics researcher Carlo Séquin, professor and associate dean at the University of California, Berkeley, with a Technical Achievement Award for his work in computer-aided design.

Coming from an experimental physics background, Séquin got his first taste for computer graphics work while at Bell Labs nearly 30 years ago. More recently, Séquin developed the Scherk-Collins Sculpture Generator, a computer program that helps sculptors visualize different configurations on a virtual sculpture so that they can determine the specifications necessary before creating physical pieces of art.

In cooperation with Berkeley mechanical engineering professor Paul Wright, under a grant from the US National Science Foundation, Séquin is currently investigating methods for using advanced CAD/CAM tools to reduce the number of steps between the conceptualization and design stage of a product and its commercial manufacture.

Séquin's Technical Achievement Award citation reads, "For outstanding contributions to design tools for computer architectures, computer graphics, industrial CAD/CAM, and artistic expressionism." A Fellow of both the IEEE and the ACM, Séquin is also an elected member of the Swiss Academy of Engineering Sciences.

The Computer Society Technical Achievement Award is presented for outstanding and innovative recent contributions in computer engineering.

### Call for Petition Candidates

The IEEE Computer Society welcomes the nominations of candidates for office. To have a name added to the ballot, a member can submit a petition to the Society secretary via mail, fax, or e-mail indicating the desired office, the starting date of the term, and the name of the candidate. The petition must also include the signatures of voting members of the Society: at least 250 signatures for Board term nominees and at least 1,000 signatures for officer nominees. Petition "signatures" can simply indicate the signing member's name and member number. A voting member can sign only one Board of Governors petition and only one officer petition for each other office. All petitions were to have been submitted to the Society secretary by the 2 June deadline.

For each petition nomination, the Society secretary must receive a statement signed by the nominee indicating a willingness and availability to serve if elected. Petition candidates must also submit biographical data, position statements, and 300-dpi digital images or studio-quality head-and-shoulders photographs to the Society secretary.

All petition nominee materials must be received by **31 July**. Send them to Computer Society Secretary Oscar Garcia at the IEEE Computer Society Headquarters, 1730 Massachusetts Ave. NW, Washington DC 20046-1992; o.garcia@computer.org.

From algorithms to artist's tools, the IEEE Computer Society Awards program recognizes achievements in all areas of computing. To nominate a colleague for his or her unique contributions to any computing specialty, visit [www.computer.org/awards/](http://www.computer.org/awards/). Most nomination forms are due by **1 October**. ■

Editor: Bob Ward, *Computer*, 10662  
Los Vaqueros Circle, PO Box 3014,  
Los Alamitos, CA 90720-1314;  
[bnward@computer.org](mailto:bnward@computer.org)

# IEEE Computer Society Election Update

**B**eginning next month, all members of the IEEE Computer Society will have the opportunity to vote for the officers who will plan new activities and direct the Society's operations in 2005. Members elected to volunteer posts will serve terms on the Board of Governors and as leaders of Boards that oversee projects such as our publications activities, educational programs, and electronic media resources. These volunteers will serve under 2005 President Gerald L. Engel, chosen as president-elect in last year's campaign.

Society members can become candidates for office in one of two ways: by Nominations Committee recommendation or by petition. The Nominations Committee accepted member recommendations of candidates until April. At a June meeting, the current Board of Governors approved the following slate of candidates brought forward by the Nominations Committee. For rules on becoming a petition candidate, see the "Call for Petition Candidates" sidebar.

## PRESIDENT-ELECT AND VICE PRESIDENT CANDIDATES

The Board-approved candidates for 2005 president-elect/2006 president are Deborah M. Cooper and Yervant Zorian. The president supervises decisions that affect the Society's programs and operations and is a nonvoting member on most Society program boards and committees.

Candidates for first vice president are Rangachar Kasturi and Michael R. Williams. The second vice president candidates are James W. Moore and Murali R. Varanasi. After the elections, 2005 President Gerald Engel will appoint the two elected vice presidents to oversee two Society boards. At his discretion, Engel will select his own appointees to head up the Society's other governing boards.

## BOARD OF GOVERNORS CANDIDATES

Members of the Board of Governors serve rotating three-year terms. Candidates for Board of Governors terms from 2005 to 2007 are Jean M. Bacon, Donald J. Bagert, George V. Cybenko, Reiner W. Hartenstein, James D. Isaak, Richard A. Kemmerer, Susan K. Land, Itaru Mimura, Brian M. O'Connell, Sorel R. Reisman, Christina M. Schober, Robert H. Sloan, and Ronald J. Vetter. The seven candidates who receive the most votes

will assume positions on the Board starting in January 2005.

**T**he IEEE Computer Society election window begins on 13 August and ends on 4 October. All members will have the opportunity to vote via paper mail or online balloting. We encourage all members to take part in electing the leaders of your Computer Society. Visit [www.computer.org/election/](http://www.computer.org/election/) after 13 August to cast your vote. ■

**Help shape  
the IEEE  
Computer  
Society of  
tomorrow.**



**Vote for 2005 IEEE**

**Computer Society officers.**

*Polls open 13 August – 4 October*

**[www.computer.org/election/](http://www.computer.org/election/)**

